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09/592,915	06/13/2000	Hideki Kikui	040405/321	5751

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EXAMINER	
BRINEY III, WALTER F	
ART UNIT	**PAPER NUMBER**
2644	

DATE MAILED: 05/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/592,915	KIKUI, HIDEKI	
	Examiner	Art Unit	
	Walter F. Briney III	2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 November 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4,7,10,11 and 14-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4,7,10,11 and 14-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

FW

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. **Claims 1, 11, 16 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cotreay (US Patent 5,528,682) in view of Glassman (US Patent 4,277,648).**

Claim 1 is limited to *a subscriber circuit.* Cotreay discloses a ring trip detector (figure 4, element 36) and a SLIC (32) that access a filter (46) in disjoint time periods (abstract). Cotreay discloses a SLIC (i.e. *a feeding circuit for feeding current of a call to a terminal through a subscriber line*) connected to a subscriber's telephone and loop by way of two relays (i.e. *a switching circuit group*) (50, 52). The relays clearly allow *for connecting the feeding circuit to the subscriber line and releasing the feeding circuit from the subscriber line*, thus inherently *controlling feeding to the terminal.* Cotreay discloses that the SLIC performs all the normal operations of a SLIC (column 2, lines 51-56). SLIC operations can be represented by the mnemonic BORSCHT (Battery, Overvoltage, Ringing, Supervision, Coding, Hybrid, Testing). The Supervision is known to relate to detecting when a terminal device is placed in an off-hook state (i.e. *said feeding circuit monitoring a state of a loop of the subscriber line*). Cotreay discloses that the output of the SLIC (32) is coupled to filter (46) by way of a resistor (RB). Even though Cotreay discloses using the filter in the battery feed operation of the SLIC, it is

not clear where the signal applied to the filter originates from. Therefore, Cotreay anticipates all limitations of the claim with the exception of *converting a two-wire signal sent from the terminal into a signal predetermined coefficient-fold, and supplying the same*.

Glassman teaches that on/off-hook state determination can be made by a SLIC with the circuitry shown in figure 2. The circuitry involves an optical isolator and a low pass filter, which can be implemented with the filter disclosed by Cotreay (figure 4, element 46). The isolator acts to mirror the signal on the telephone line to the SLIC circuitry (i.e. *converting a two-wire signal sent from the terminal into a signal predetermined coefficient-fold, and supplying the same*).

It would have been obvious to one of ordinary skill in the art at the time of the invention to perform on/off-hook state determination as taught by Glassman because Cotreay discloses a SLIC that must perform a Supervisory function, and because the on/off-hook detection of Glassman includes a low pass filter, which will prevent false detections of hook status.

Cotreay discloses a ring trip detector (i.e. *a level converter*) (figure 4, element 36), which functions to enumerate the level of current flowing in a subscriber loop. The detector is connected to the phone line through a relay (i.e. *connected to the subscriber line through said switching circuit group*) (54). The input of ring trip circuit is diagrammed as two wires (i.e. *for converting a two-wire signal sent from the terminal*), and the output is some single-ended representation of the input (i.e. *into a signal any coefficient-fold and supplying the same, separately from said feeding circuit*).

With respect to the new limitations, which are essentially the same as those presented in originally filed claim 2, Cotreay discloses resistors (figure 4, elements RA, RB) that receive the outputs from the ring trip detector and the SLIC (i.e. *a signal output circuit which receives the output signal of said feeding circuit and the output signal of said level converter*). The filters are used by the outputs during disjoint time periods (i.e. *and supplies one of the signals*). Each filter shares a capacitor (i.e. *a wave filter which filters the output signal of said signal output circuit*) (46). The ring trip detector makes use of a comparator (i.e. *a signal monitor which monitors a signal based on the output signal of said wave filter and supplies signal monitor information*) (38). Cotreay discloses connecting either the ring trip detector or the SLIC to the line, inherently requiring a *control circuit* (column 3, lines 1-22). In operation, the circuit of Cotreay selectively couples either SLIC (32) or ring trip detector (36) to the line using relays (50, 52, 66 and 68) (i.e. *control connection and disconnection by said switching circuit group*). Clearly, this results in changing the output levels of the SLIC (32) and ring trip detector (36) (i.e. *control... the output of said feeding circuit and level converter*), and since the signal output circuit depends on the output of the SLIC and ring trip detector, the control circuit of Cotreay *controls the output of the signal output circuit.* Cotreay discloses that attaching the ring generator (42) and ring trip detector (36) to the line using the relays when the subscriber is to be rung (i.e. *according to upper control information*). When the comparator (38) signals a ring trip condition, the ring trip detector is disconnected (i.e. *depending on the operation*). In addition, as is the understood operation of a telephone system, the ring trip detector remains disconnected

while the telephone terminal (30) is off-hook, as detected by the SLIC. (i.e. *according to the loop monitoring output of said feeding circuit*). Therefore, Cotreay in view of Glassman makes obvious all limitations of the claim.

Claim 11 is limited to *a subscriber circuit as claimed in claim 1*, as covered by Cotreay in view of Glassman. Cotreay discloses a ring trip detection circuit (figure 4, element 36), the detector converts the double-ended measurement across the sensing resistor (40) into a single-ended output, scaled by some factor (i.e. *wherein said level converter is formed by a converter*). Therefore, Cotreay in view of Glassman makes obvious all limitations of the claim.

Claim 16 is limited to *a subscriber circuit*. Cotreay discloses a ring trip detector (figure 4, element 36) and a SLIC (32) that access a filter (46) in disjoint time periods (abstract). Cotreay discloses a SLIC (i.e. *a feeding circuit for feeding current of a call to a terminal through a subscriber line*) connected to a subscriber's telephone and loop by way of two relays (i.e. *a switching circuit group*) (50, 52). The relays clearly allow *for connecting the feeding circuit to the subscriber line and releasing the feeding circuit from the subscriber line*, thus inherently *controlling feeding to the terminal*. Cotreay discloses that the SLIC performs all the normal operations of a SLIC (column 2, lines 51-56). SLIC operations can be represented by the mnemonic BORSCHT (Battery, Overvoltage, Ringing, Supervision, Coding, Hybrid, Testing). The Supervision is known to relate to detecting when a terminal device is placed in an off-hook state (i.e. *said feeding circuit monitoring a state of a loop of the subscriber line*). Cotreay discloses that the output of the SLIC (32) is coupled to filter (46) by way of a resistor (RB). Even

though Cotreay discloses using the filter in the battery feed operation of the SLIC, it is not clear where the signal applied to the filter originates from. Therefore, Cotreay anticipates all limitations of the claim with the exception of *converting a two-wire signal sent from the terminal into a signal predetermined coefficient-fold, and supplying the same*.

Glassman teaches that on/off-hook state determination can be made by a SLIC with the circuitry shown in figure 2. The circuitry involves an optical isolator and a low pass filter, which can be implemented with the filter disclosed by Cotreay (figure 4, element 46). The isolator acts to mirror the signal on the telephone line to the SLIC circuitry (i.e. *converting a two-wire signal sent from the terminal into a signal predetermined coefficient-fold, and supplying the same*).

It would have been obvious to one of ordinary skill in the art at the time of the invention to perform on/off-hook state determination as taught by Glassman because Cotreay discloses a SLIC that must perform a Supervisory function, and because the on/off-hook detection of Glassman includes a low pass filter, which will prevent false detections of hook status.

Cotreay discloses a ring trip detector (i.e. *a level converter*) (figure 4, element 36), which functions to enumerate the level of current flowing in a subscriber loop. The detector is connected to the phone line through a relay (i.e. *connected to the subscriber line through said switching circuit group*) (54). The input of ring trip circuit is diagrammed as two wires (i.e. *for converting a two-wire signal sent from the terminal*),

and the output is some single-ended representation of the input (i.e. *into a signal any coefficient-fold and supplying the same, separately from said feeding circuit*).

With respect to the new limitations, which are essentially the same as those presented in originally filed claim 3, Cotreay discloses a shared capacitor (i.e. *a wave filter for filtering the output signal of said feeding circuit and the output signal of said level converter*) (figure 4, element 46). Cotreay discloses switches to ground (i.e. *a signal output circuit*) (58, 60) that shunts one of the outputs of the capacitor to ground (i.e. *for receiving the output signal of said feeding circuit and the output signal of said level converter filtered through said wave filter, and supplying one of the signals*). The ring trip detector makes use of a comparator (i.e. *a signal monitor which monitors a signal based on the output signal of said wave filter and supplies signal monitor information*) (38). Cotreay discloses connecting either the ring trip detector or the SLIC to the line, inherently requiring a *control circuit* (column 3, lines 1-22). In operation, the circuit of Cotreay selectively couples either SLIC (32) or ring trip detector (36) to the line using relays (50, 52, 66 and 68) (i.e. *control connection and disconnection by said switching circuit group*). Clearly, this results in changing the output levels of the SLIC (32) and ring trip detector (36) (i.e. *control... the output of said feeding circuit and level converter*), and since the signal output circuit depends on the output of the SLIC and ring trip detector, the control circuit of Cotreay *controls the output of the signal output circuit*. Cotreay discloses that attaching the ring generator (42) and ring trip detector (36) to the line using the relays when the subscriber is to be rung (i.e. *according to upper control information*). When the comparator (38) signals a ring trip condition, the

ring trip detector is disconnected (i.e. *depending on the operation*). In addition, as is the understood operation of a telephone system, the ring trip detector remains disconnected while the telephone terminal (30) is off-hook, as detected by the SLIC. (i.e. *according to the loop monitoring output of said feeding circuit*). Therefore, Cotreay in view of Glassman makes obvious all limitations of the claim.

Claim 20 is essentially the same as claim 11, and is rejected for the same reasons.

2. Claims 4, 14, 17 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cotreay in view of Glassman in view of Holmes et al. (US Patent 3,941,939) and further in view of Bouty et al. (US Patent 3,865,992).

Claim 4 is limited to *a subscriber circuit as claimed in claim 1*, as covered by Cotreay in view of Glassman. Cotreay discloses a ring trip detector (figure 4, element 36), which converts a sensed current into a single-ended output scaled by some factor. Glassman teaches an optical isolator (figure 2, elements 24) that provides a single-ended output for application to a low pass filter. Therefore, Cotreay in view of Glassman makes obvious all limitations of the claim with the exception *wherein the coefficient used for said feeding circuit converting the two-wire signal into a signal coefficient-fold is identical to the coefficient used for said level converter converting the two-wire signal into a signal coefficient-fold.* Holmes teaches a ring trip circuit that uses optical isolators to couple the sensed current on the line (figure 1, current through QD) to the detection circuitry used to determine hook status (figure 1, amplifier). Bouty teaches that optical isolators are good isolation devices because of their reduced area

and increased longevity (column 1, lines 37-65). Optical isolators operate by sensing a current and producing an optical link to a photosensitive transistor. The transistor becomes conductive, thus allowing a supply that is separate from the sensed current to provide a mirrored current. Thus, by using two optical isolators, one for the on/off-hook detector and one for the ring trip detector, that convert the sensed currents into signals within the SLIC's voltage supply, the converting circuits are using identical coefficients. It would have been obvious to one of ordinary skill in the art at the time of the invention to use an optical isolator as taught by Holmes for the purpose of implementing a ring trip detecting circuit with a long life and small area, which is taught by Bouty.

Claim 14 is a combination of claims 4 and 11. Therefore, Claim 14 is rejected for the same reasons as claims 4 and 11.

Claims 17 and 21 are essentially the same as claims 4 and 14, respectively, and are rejected for the same reasons.

3. **Claims 7, 15, 18 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cotreay in view of Glassman and further in view of Hetherington et al. (US Patent 4,007,335).**

Claim 7 is limited to *a subscriber circuit as claimed in claim 1*, as covered by Cotreay in view of Glassman. Cotreay discloses a SLIC that is known to perform BORSCHT functions, the first being battery feed. However, Cotreay does not disclose the way in which battery feed is achieved. Therefore, Cotreay in view of Glassman makes obvious all limitations of the claim with the exception *wherein said feeding circuit is formed by a transistor*. Hetherington teaches a solid state battery feed circuit that

uses at least one transistor (figure 1, element 11). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the battery feed circuitry as taught by Hetherington to provide the battery feed function necessitated by Cotreay and because the transistor switches of Hetherington provide a smaller circuit, which reduces costs (Hetherington, column 1, lines 21-45).

Claim 15 is a combination of claims 7 and 11. Therefore, Claim 15 is rejected for the same reasons as claims 7 and 11.

Claims 18 and 22 are essentially the same as claims 7 and 15, respectively, and are rejected for the same reasons.

4. **Claims 10 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cotreay in view of Glassman in view of Holmes in view of Bouty and further in view of Hetherington.**.

Claim 10 is a combination of claims 4 and 7. Therefore, Claim 10 is rejected for the same reasons as claims 4 and 7.

Claim 19 is essentially the same as claim 10, and is rejected for the same reasons.

Response to Arguments

Applicant's arguments filed 08 November 2004 have been fully considered but they are not persuasive.

With respect to currently amended claim 1 and new claim 16, the applicant's arguments on pages 7 and 8 of their current response fail to comply with 37

CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter F. Briney III whose telephone number is 571-272-7513. The examiner can normally be reached on M-F 8am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

WFB
5/6/05

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SUPERVISORY PATENT EXAMINER